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YOUNG & THOMPSON			LIU, XUE H	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/541,466	<b>Applicant(s)</b> BINDA ET AL.
	<b>Examiner</b> XUE LIU	<b>Art Unit</b> 1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 20 October 2008.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-21 is/are pending in the application.

4a) Of the above claim(s) 1-6 and 18 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 7-17 and 19-21 is/are rejected.

7) Claim(s) 7,13 and 16 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 06 July 2005 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08) \_\_\_\_\_  
Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election with traverse of Group II in the reply filed on 10/20/08 is acknowledged. The traversal is on the ground(s) that groups I and II have common technical features not shown in prior art. This is not found persuasive because applicant argues that i) the pneumatically actuatable gripping means; ii) the vacuum sheet holding device; iii) up-side down turning one mold to close the molds; and iv) parallel processing lines are novel in respect to the prior art. However, i) pneumatically actuatable gripping means is disclosed in US 5,975,879, ii) vacuum sheet holding device is disclosed in US 5,256,365 and US 5,158,786, iii) up-side down turning one mold to close the molds is disclosed in US 2,796,033, and iv) parallel processing lines is disclosed in WO 02/14050 A2.

The requirement is still deemed proper and is therefore made FINAL.

2. Applicant's election of species I in the reply filed on 10/20/08 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Claims 1-6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10/20/08.

4. Claim 18 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/20/08.

***Drawings***

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: reference numbers F, FC, and FS in fig. 1, reference numbers F4 and S1 in fig. 2A, and reference numbers 26 in fig. 2C. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

6. The disclosure is objected to because of the following informalities: on page 13, line 1 of the specification, the "bell-shaped device 14A, 15B" should read "the bell-shaped device 15A, 15B". On page 11, line 4 of the specification, the "stations 16A, 16B" should read "stations 14A, 14B". On page 15, line 29 of the specification, the "thermoforming station 15A" should read "thermoforming station 16A". On page 16, line 8 of the specification, the lower heat 47" should read "lower heater 47". On page 17, line 16 of the specification, the "mold 17B" should read "mold 17A". On page 17, line 29 and 31 of the specification, the "sheets SA1, SB1" should read

"sheets SA1, SA2". On page 19, line 14 of the specification, the "processing line 16B" should read "processing line 10B" or "thermoforming station 16B".

Appropriate correction is required.

***Claim Objections***

7. Claims 7, 13 and 16 are objected to because of the following informalities: In line 15 of claim 7, the "processing line (A, B)" should read "processing line (10A, 10B). In lines 6 and 21 of claim 7, the "processing lines (A, B)" should read "processing lines (10A, 10B)". In lines 3-4 of claim 13, "a adjustable vacuum source" should read "an adjustable vacuum source". In lines 3-4 of claim 16, the "processing lines (A, B)" should read "processing lines (10A, 10B)".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 7-17, and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 7, claim elements "pneumatically actuatable gripping means for gripping the plastic sheets around their peripheral edges" and "vacuum control means for the vacuum holding device for supporting the heated plastic sheets in a substantially flat condition" are means (or step) plus function limitations that invoke 35 U.S.C. 112, sixth paragraph. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed

function. While the claim elements are shown in the diagrams, the written description of the specification does not expressly recite the corresponding structures of the claim elements.

Applicant is required to:

- (a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or
- (b) Amend the written description of the specification such that it expressly recites what structure, material, or acts perform the claimed function without introducing any new matter (35 U.S.C. 132(a)).

If applicant is of the opinion that the written description of the specification already implicitly or inherently discloses the corresponding structure, material, or acts so that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function, applicant is required to clarify the record by either:

- (a) Amending the written description of the specification such that it expressly recites the corresponding structure, material, or acts for performing the claimed function and clearly links or associates the structure, material, or acts to the claimed function, without introducing any new matter (35 U.S.C. 132(a)); or
- (b) Stating on the record what the corresponding structure, material, or acts, which are implicitly or inherently set forth in the written description of the specification, perform the claimed function. F& more information, see 37 CFR 1.75(d) aid MPEP 21si and 608.01(0).

Claim 7 recites the limitation "said vacuum holding device" in line 20 of the claim. There is insufficient antecedent basis for this limitation in the claim. For examining purposes, the "vacuum sheet holding device" in line 18 is interpreted to mean a "vacuum holding device" so as

to form antecedent basis for “said vacuum holding device” in line 20 of the claim. Claims 8-21 are rejected for depending from claim 7.

Claim 7 recites the limitation “where the individual plastic sheets (SA, SB) are thermoformed in a first and a second shell (GA, GB) into a respective first and second shaping mold (17A, 17B) in lines 8-11 of the claim. It is to the examiner’s understanding that this sentence meant to read “where the individual plastic sheets (SA, SB) are thermoformed in a first and a second shaping mold (17A, 17B) into a respective first and second shell (GA, GB)”. Claims 8-21 are rejected for depending from claim 7.

Claim 12 recites the limitation “the vacuum supporting device” in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim. For examining purposes, the “vacuum supporting device” is interpreted as to refer to the “vacuum holding device”.

Regarding claim 16, the omission of the word “means” before the sentence “for transferring the closed molds (17A, 17B) between the thermoforming station (16A, 16B) and the cooling station (20) of the plant” in lines 5-7 of the claim renders the claim indefinite. For examining purposes, the sentence in lines 5-7 of the claim is understood to mean “means for transferring the closed molds (17A, 17B) between the thermoforming stations (16A, 16B) and the cooling station (20) of the plant”. Claims 17 and 19 are rejected for depending from claim 16.

Claim 19 recites the limitation “said means for transferring the molds (17A, 17B)” in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
12. Claims 7-12, 16-17, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vorenkamp et al. (WO 02/14050 A2) in view of Feinstein (US 2,796,033), Dresen et al. (US 5,975,879) and Reil et al. (US 5,158,786).

Regarding claim 7, the limitations “pneumatically actuatable gripping means for gripping the plastic sheets around their peripheral edges”, and “vacuum control means for the vacuum holding device for supporting the heated plastic sheets in a substantially flat condition” invoke 35 USC § 112 6th paragraph. The pneumatically actuatable gripping means for gripping the plastic sheets around their peripheral edges is a flat peripheral frame. The vacuum control means for supporting the heated plastic sheets in a substantially flat condition is an air suction source. Vorenkamp et al. teach a plant 10 for manufacturing plastic fuel tanks comprising first and second twin-sheet thermoformed shells 58, 60, according to which first and second thermoformable plastic sheets 58, 60 are independently heated and moved along respective first and second parallelly arranged processing lines 32, 34, from a loading station 12a, 12b through at

least one heating station 14a, 16a, 14b, 16b, towards at respective thermoforming station 24, 26 where the individual plastic sheets 58, 60 are thermoformed in a first and a second shaping mold 66, 68 into a respective first and second shell 58, 60 (see abstract, page 1, lines 4-6, page 2, lines 15-25, page 3, lines 18-30, page 4, lines 1-4 and 28-31, page 5, lines 13-21, page 10, lines 11-19 and 24-31, page 11, lines 3-12 and 27-31, page 12, lines 1-9 and 16-23, page 13, lines 19-24, page 15, lines 17-32, page 16, lines 1-17, page 17, lines 1-6 and 12-18, claim 21, and figs. 1-3). Vorenkamp et al. do not teach that the first and second shaping molds are side by side arranged with the open cavities of both molds facing upwards and drive means conformed and arranged to turn one mold upside down to superimpose to the other one and to cause welding of overlapped sealing areas of the thermoformed shells by compression of the same molds. However, Feinstein teaches first and second shaping molds 14, 15 are side by side arranged with the open cavities of both molds facing upwards, and drive means 11 conformed and arranges to turn one mold (15) upside down to superimpose to the other one (14)and to cause welding of overlapped sealing areas 20b, 21b of the thermoformed shells 20a, 21a by compression of the same molds (see figs, 1, 1a, and 1b. col. 1, lines 68-72, col. 2, lines 1-4, 38-51, col. 3, lines 12-18). It would have been obvious to one of ordinary skill in the art to apply the teaching of Feinstein in Vorenkamp et al.'s system of producing fuel tanks since it eliminates the need to bring the mold half with cavity facing downward to the mold half with cavity facing upward and align the mold halves to fuse the thermoformed shells together. Vorenkamp et al. do not teach pneumatically actuatable gripping means which is a flat peripheral frame. However, Dresen et al. teach a pneumatic clamping system 30 for gripping the plastic sheets 43, 45 around their peripheral edges, comprised of a sheet clamping frame 66 movable along the processing line (see figs. 1-4, col. 2, lines 59-62, col.

3, lines 54-59). It would have been obvious to one of ordinary skill in the art to provide the pneumatic clamping system as taught by Dresen et al. in the invention of Vorenkamp et al. since pneumatic clamps can be operated remotely, provides consistent force, is fast and capable of simultaneous or sequence operation of multiple clamps compared to other clamping systems for releasably holding the plastic sheets. Vorenkamp et al. do not teach a vacuum holding device for the heated plastic sheets, said vacuum holding device being movable along the processing lines, and an air suction source for the vacuum holding device for supporting the heated plastic sheets in a substantially flat condition. However, Reil et al. teach a vacuum holding device 7, 7a, 7b for the heated plastic sheets 8, the vacuum holding device 7, 7a, 7b being movable along the processing lines, and vacuum control means for the vacuum holding device 7, 7a, 7b for supporting the heated plastic sheets 8 in a substantially flat condition (see abstract, figs. 3-8, col. 9, lines 39-47, col. 13, lines 26-29 and claim 1). It would have been obvious to one of ordinary skill in the art to provide the vacuum holding device as taught by Reil et al. in the invention of Vorenkamp et al. since the vacuum holding device would provide auxiliary support for the plastic sheets while they are being moved.

Regarding claim 8, Vorenkamp et al. teach that the plant 10 for manufacturing plastic fuel tanks comprises a sheet preheating station 14A, 14B (see page 12, lines 1-20, page 15, lines 17-30, claims 21, 30, 34, and figs. 2-3).

Regarding claims 9 and 10, Vorenkamp et al. do not positively teach a centering station, however, it would have been obvious to one of ordinary skill in the art to provide a centering device for positioning the plastic sheets to facilitate gripping of the plastic sheets by the gripping device. It would also have been obvious to one of ordinary skill in the art to provide the sheet

centering station upstream of the sheet preheating station, since this would allow the plastic sheets to be transferred by the gripping device from the centering station to the preheating station.

Regarding claim 11, it has been generally been recognized that to shift location of parts when the operation of the device is not otherwise changed is within the level of ordinary skill in the art, *In re Japikse*, 86 USPQ 70; *In re Gazda*, 104 USPQ 400. Therefore, it would have been obvious to one of ordinary skill in the art to provide the centering station between the preheating station and the second heating station for the plastic sheets.

Regarding claim 12, Reil et al. teach that the vacuum holding device 7, 7a, 7b comprises heating elements 6 for the plastic sheets 8 (see abstract, fig. 3, col. 10, lines 16-25, col. 12, lines 57-59 and claim 1).

Regarding claims 16 and 17, the limitation "means for transferring the closed molds between the thermoforming station and the cooling station of the plant" invokes 35 USC 112 6th paragraph. This limitation is construed as a rotary table or a shuttle and their equivalents. Feinstein teaches a mold cooling station 33 downstream of the processing line, downstream from a thermoforming station (as shown in the right hand-side of fig. 1), and an endless belt 17 for transferring the closed molds 14, 15 between the thermoforming station and the cooling station. Feinstein also teaches other means for moving the mold between the stations, such as the well-known automatic rotating table or the like (see figs. 1 and 1a, col. 2, lines 20-30 and 53-69, col. 3, lines 39-50). Feinstein is silent about providing a plurality of mold supporting surfaces on the rotary table. However, it would have been obvious to one of ordinary skill in the art to provide a plurality of mold supporting surfaces on the rotary table to withstand the weight of the mold.

Although Feinstein does not teach that the mold cooling station is on one side of the processing line in a side aligned condition with the thermoforming station, it has generally been recognized that to shift location of parts when the operation of the device is not otherwise changed is within the level of ordinary skill in the art, *In re Japikse*, 86 USPQ 70; *In re Gazda*, 104 USPQ 400.

Regarding claim 19, Feinstein teaches a mold clamping cage 12, 13 reciprocable between a thermoforming station (as shown at the right-hand side of fig. 1) and the cooling station 33 (see figs. 1 and 1a, col. 2, lines 5-19).

Regarding claim 20, Feinstein teaches that the drive means 11 for upside down turning one mold 15 comprises a book press (see figs. 1-1b, col. 1, lines 68-72 to col. 2, lines 1-4).

13. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vorenkamp et al., Reil et al., Dresen et al. and Feinstein as applied to claim7 above, and further in view of Gordon et al. (US 5,256,365).

Regarding claim 13, Reil et al. do not positively teach that the vacuum holding device is connected to an adjustable vacuum source. However, Gordon et al. teach a vacuum holding device 66 connected to an adjustable vacuum source (see abstract, fig. 10, col. 6, lines 21-34 and claim 1). It would have been obvious to one of ordinary skill in the art to provide the adjustable vacuum source as taught by Gordon et al. in the invention of Vorenkamp et al. since Gordon et al. teach that the vacuum level can be adjusted during moving of an object from one location to another location.

Regarding claim 15, Gordon et al. teach that the vacuum holding device 66 is in the form of a pneumatically actuatable suction bell (see abstract, fig. 10, col. 4, lines 57-62, col. 6, lines 21-34 and claim 1).

14. Claims 14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vorenkamp et al., Reil et al., Dresen et al. and Feinstein as applied to claim 7 above, and further in view of Alesi (US 3,779,697).

Regarding claim 14, Vorenkamp et al. do not disclose that the mold comprises second pneumatically actuatable sheet gripping means. However, Alesi teaches that the mold half 106 comprises magnetically actuatable gripping means 96, 98 (see figs. 5-7, col. 4, lines 31-43). It would have been obvious to one of ordinary skill in the art to provide second sheet gripping means to the mold as taught by Alesi in the invention of Vorenkamp et al. since this ensures precise placement of the plastic sheets in the mold.

Regarding claim 21, the limitation "mechanical means for gripping the edges of the heated plastic sheets invokes 35 USC 112 6th paragraph. The limitation is construed as a presser or its equivalent. Feinstein teaches that the mold 14, 15 comprises a pair of clamping frames 22, 23 for gripping the edges 20b, 21b of the heated plastic sheets 20, 21 (see fig. 1, col. 2, lines 56-66).

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XUE LIU whose telephone number is (571)270-5522. The examiner can normally be reached on Monday to Friday 9:30 - 6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Phillip Tucker can be reached on (571)272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/X. L./  
Examiner, Art Unit 1791

/Philip C Tucker/  
Supervisory Patent Examiner, Art Unit 1791